

DEFENSE INFORMATION INFRASTRUCTURE (DII)

COMMON OPERATING ENVIRONMENT (COE)

DII COE Version Description Document for Distributed Computing Environment (DCE) Server Segment v1.0.0.6 (Solaris 2.5.1) Version Description Document 9/30/97

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1. System Overview

DCE provides services that can be found in other computer networking environments, but packages them so as to make them much easier to use. DCE supports both portability and interoperability by providing the developer with capabilities that hide differences among the various hardware, software, and networking elements an application will deal with in a large network. The DCE Remote Procedure Call (RPC) facility provides a way of communicating between software modules running on different systems that is much simpler to code than older methods. The DCE Security Service provides a reliable way of determining if a user of a distributed system should be allowed to perform a certain action.

2. Reference Documents

- *Transarc DCE Introduction*
- *Transarc DCE Command Reference*
- *OSF[®] DCE Application Development Guide - Introduction and Style Guide*
- *OSF[®] DCE Application Development Guide - Core Components*
- *OSF[®] DCE Application Development Guide - Directory Services*
- *OSF[®] DCE Application Development Reference*
- *OSF[®] DCE Problem Determination Guide*
- *Transarc DCE Upgrade Instructions and Release Notes*
- Version Description Document Defense Information Infrastructure (DII) Common Operating Environment (COE) *Distributed Computing Environment (DCE) Server Segment* Version 1.0.0.6, September 30, 1997.

3. Version Description

3.1 Inventory of Materials

- Magnetic Media: Two 8mm tapes consisting of relative tar of the Distributed Computing Environment (DCE) Server Segment, Version 1.0.0.6/Solaris 2.5.1, September 30, 1997
- Version Description Document Defense Information Infrastructure (DII) Common Operating Environment (COE) Distributed Computing Environment (DCE) Server Segment, Version 1.0.0.6, September 30, 1997
- *Installation Instructions for the Distributed Computing Environment Server (DCES) Segment* v1.0.0.6, September 30, 1997

3.2 Software Changes

Reference Appendix A for a list of the DCE Server Segment software changes.

4. Installation Instructions

Reference the *Installation Instructions for the Distributed Computing Environment (DCE) Server Segment* v1.0.0.6 for instructions on installing the DCES Segment.

4.1 New Features in the DCE Server Segment

This section presents changes in the installation procedures.

- The DCES installation installs the Security server, the CDS server, the DTS server and the DCE client but does not configure these services unless selected from the DCE Configuration Menu.
- The Transarc DCE Patch 5 is installed during the installation process. If a higher patch is already installed, no action is taken and a warning is displayed.
- Configuration of the DCE/DFS client can be done through the DCE Server Configuration Menu.
- On-line help and guidance is available before any configuration takes place.
- Ability to view current DCE configuration.
- The CDS root directory version will be automatically upgraded to version 4.0 when configuring the first CDS in the cell.
- During DCE client configuration the **dcad** is restarted with the **-x** option and the *setup_state* file is modified accordingly.
- Configuration of the NFS/DFS Gateway occurs more smoothly in a cell that does not contain any DFS servers.
- Recommended DII security policies can be set in the Utilities Menu.
- When registry policies are set, the *passwd_override* Extended Registry Attribute is added to the cell administrator principal to prevent him/her from being locked out of the system due to an expired password.
- An option in the Utilities Menu to populate a newly created CDS with a replica of every directory in the CDS namespace.
- An option in the utilities Menu to set a **cron** job which will purge expired DCE credentials every 8 hours.

4.2 Patches and the DCE Server Configuration Menu

In most instances, the DCE SERVER CONFIGURATION MENU calls the Transarc "**dcsetup**" command suite. Two instances which have been customized are the NFS/DFS Gateway and the CDS Server configuration.

The Gateway configuration does not use the "**dcesetup**" command and executes its own private routines to correct errors which would have occurred if the Transarc "**dcesetup config_dfsgw**" command were used in a cell with no DFS servers previously configured.

The CDS Server configuration does not use the "**dcesetup**" command. Instead, it executes its own private routines which automatically upgrade the cell's root directory version number to 4.0, whenever a Initial CDS is configured.

Because these two configurations use private routines, any future Transarc patch which affects the configuration of the CDS and/or Gateway, will not be noticed by the DCE SERVER CONFIGURATION MENU. Despite this possibility, we STRONGLY recommend that you regularly check the Transarc World Wide Web site at www.transarc.com to learn about the latest DCE patches and how to obtain a copy.

Furthermore, we suggest that even the most experienced DCE administrator familiarize him/herself with the inter-workings of the DCE SERVER CONFIGURATION MENU. This script is called **/h/COTS/DCES/bin/DCES_configure**. The script takes into account many of the recommendations mentioned in the *Transarc DCE 1.1 Release Notes*.

5. Known Problems and Errors

5.1 De-Installation Problems

The DCES segment CANNOT be de-installed using the Segment Installer. To de-install the DCES segment, use the steps identified in the *SegDescrip/ReleaseNotes* or in Section 6.2.

5.2 Making an Installation Tape

The DCES Segment is an aggregate of the DCE Client and DCE Server segments. In order to guarantee that the segments are installed in the proper order (DCE_client first then DCES), It is necessary to run the Use the MakeInstall command as follows:

```
# ./MakeInstall DCE_server DCE_client DCES
```

This will create the Aggregate Segment with the DCE_server as the Parent Segment and DCE_client as the first child segment installed and then DCES as the last segment installed.

6. Release Notes

6.1 General

1. The *Transarc DCE Upgrade Instructions and Release Notes Solaris Version 2.5 (SunOS Version 5.5)* contains the following note:
“Solaris 2.5 is not binary-compatible with Solaris 2.5.1. Support for Solaris 2.5.1 is not included as part of this release but will be incorporated into future release of Transarc DCE.”

This is INCORRECT. Transarc DCE for Solaris 2.5 will operate normally on a Solaris 2.5.1 machine.

6.2 De-Install

The DCES segment cannot be de-installed using the Segment Installer. To de-install the DCES segment, login as root and do the following steps:

Step 1:

Unconfigure all DCE components on the machine using the command:

`/etc/dcesetup unconfig`

You may be instructed to issue this command twice depending on whether or not the machine is also a DFS client.

Step 2:

de-install the DCE server software with the command:

`/etc/dcesetup uninstall`

Step 3:

Confirm that everything is to be removed

Uninstall all (remove everything) ? (y, n, q, ?) [n] **y**

Step 4:

Remove the DCES directory structure under the /h partition using:

`/usr/bin/rm -r /h/DCE_server`

`/usr/bin/rm -r /h/COTS/DCE_client`

`/usr/bin/rm -r /h/COTS/DCES`

Step 5:

Remove configuration scripts from the /etc directory.

`/usr/bin/rm /etc/audit_config.dii`

`/usr/bin/rm /etc/dce_config.dii`

`/usr/bin/rm /etc/dce_unconfig.dii`

`/usr/bin/rm /etc/dtssserver_config.dii`

Step 6:

Finally, to remove the DCES menu item from the sysadmin menubar. Remove the following lines from the **/h/USERS/local/Profiles/SA_Default/Menus/SA_Default.main** file:

```
#===Begin DCE Servers Segment ====  
#-----  
# DCE Menu Items  
#-----  
APPEND :DCE  
ITEM :DCE Server Menu:/h/COTS/DCES/bin  
DCES_config.button:1:1:1:R1  
ITEM :Configure DCE Client:xterm -title "DCE Setup Screen" -e  
/h/COTS/DCE_client/bin/SARunDCEConfig -c_config:1:1:1:R1  
ITEM :Configure DTS server:xterm -title "DCE Setup Screen" -e  
/h/COTS/DCE_client/bin/SARunDCEConfig -d_config:1:1:1:R1  
ITEM :Configure Audit server:xterm -title "DCE Setup Screen" -e  
/h/COTS/DCE_client/bin/SARunDCEConfig -a_config:1:1:1:R1  
ITEM :Unconfigure DCE :xterm -title "DCE Setup Screen" -e  
/h/COTS/DCE_client/bin/SARunDCEConfig -unconfig:1:1:1:R1  
ITEM :Upgrade Patch :/h/COTS/DCE_client/bin/upgrade:1:1:1:R1  
APPENDEND  
#=== End DCE Servers Segment =====
```

Logging out and back into the environment will update the
<NETWORK> | <DCE> menu.

7. Patch List

7.1 Solaris Operating System Patches

The Solaris 2.5 Recommended Patches” supersedes earlier patches. Once the machine is running Solaris 2.5 and these patches are installed, you no longer need to install the software patches listed in Section 2.1.2.1, “Applying Required Software Patches from Sun,” of the Transarc DCE Release Notes.

Sun Ultra Platforms:

Version 1.1. of the Transarc DCE product for Solaris 2.5.1 requires one patch. This patch corrects a kernel problem in the Solaris operating environment.

patch ID 103093-03

7.2 Transarc System Patches

Patch 5

Binaries affected:

Solaris 2.5 US

```
./dce1.1/bin/acl_edit
./dce1.1/bin/cm
./dce1.1/bin/cdsd
./dce1.1/bin/cdsadv
./dce1.1/bin/cdsclerk
./dce1.1/bin/dceback
./dce1.1/bin/dced
./dce1.1/bin/dcecp
./dce1.1/bin/dtsd
./dce1.1/bin/fts
./dce1.1/bin/secd
./dce1.1/bin/login.dce
./dce1.1/bin/login_reset
./dce1.1/dcecp/cell.dcp
./dce1.1/dcecp/host.dcp
./dce1.1/etc/dce_modules/kernel
./dce1.1/etc/dce_modules/login
./dce1.1/kernel/drv/krpch
./dce1.1/kernel/fs/dfs
./dce1.1/kernel/fs/lfs
./dce1.1/kernel/sys/dfscore
./dce1.1/nls/msg/en_US.ASCII/dfscmu.cat
./dce1.1/nls/msg/en_US.ASCII/dfszhscat
./dce1.1/nls/msg/en_US.ASCII/dfszhcm.cat
./dce1.1/nls/msg/en_US.ASCII/dfszhpx.cat
./dce1.1/share/include/dce/pthread_basic.h
./dce1.1/usr/lib/libaudit.a
./dce1.1/usr/lib/libdce.a
./dce1.1/usr/lib/libdce.so.3
./dce1.1/usr/lib/libtcl.a
./dce1.1/usr/lib/libdcecp.a
```

SUMMARY OF FIXES:

- lb_admin fails after start of HP's PerfView product
- host unconfig /./hosts deletes all host cds entries
- dcesetup needs to sync before changing /etc/name_XXX
- Add additional message when dceback -host is used without "local"
- unix id bounds are not handled consistently

- Fixes issues with CN RPC call hanging, possibly related to maybe RPC calls
- Solves issue with core dumps in dced group override parsing
- Fixes defect with cdsadv hanging on a semop in a syscall.
- Fixes problem with core dump in binding_cache_lookup():sec rca layer
- Repairs dcesetup config not checking for time skew w/ master sec
- Fixes problem with dced dumping core with damaged login context
- Fixes issue with dcecp endpoint show giving connection rejected on udp-only machine
- Repairs problem with integrated login: uid and gid overrides don't work
- Fixes possible tight loop in sec if starting up with corrupted db
- Fixes problem with dce_acl_resolve_by_name failing
- Fixes problem with dced, allowing ig to rebind to alternative site if the registry becomes unavailable
- Solves problem with the function sec_rgy_site_bind returning an unavailable site
- Fixes problem with DCED not stopping on shutdown, DTS error
- Solves problem with Encina application server dropping core when calling dce routine
- Fixed process_tgs_req call which appeared to be causing free-list corruption in sec
- Fixed issue with the predicate in dce_aud_next not working correctly
- Fixes defect with function sec_login_refresh_identity deref null pointer
- Fixes defect with function uuid_create generating duplicates
- Fixes issue with thread.h and _POSIX_SOURCE in conflict on Solaris 2.5
- Fixes problem with the command login_reset failing
- Fixes problem with ACL entry for a deleted principal not being deleted.
- Fixes defect with episode panicking in vol_efsloDone with B_DONE set.
- Solves problem with start secval commands resulting in stack overflow when loading DFS kernel modules
- Solaris AFS/DFS Integrated login bug if user is in too many groups
- dcecp group create sets projlist to no, docs say yes
- Enable Episode access caching
- cdsd gives RPC_CN_AUTH_VFY_CLIENT_REQ on server failed: can't find appropriate seal
- cm_ConnByMHosts infinite loop when dfsbind dies
- BulkFetchStatus can violate pipe discipline
- cm Iscellinfo (and PIOCTL) return incorrect info
- dcecp fails to process command abbreviations
- dcecp gets confused about its CDS access
- dcecp can be unpredictable in interactive mode after error
- rpcd end-point map clean-up logic fails with large number of entries
- Same-owner checks are done without reference to cellid

- Corrects the problem of `sec_rgy_attr_lookup_by_id` fails if some attrs are deleted
- Correct `rpc_mgmt_is_server_listening()` hang
- Unexpected `symlink()` names create non-mount-points
- Need a way for an admin to enable a password-retry-disabled account
- DCE-rpc-0022 when adding acls during Setup DCE for Encina
- fx: unexpected truncation of file
- `dcecp -c cell ping -clients` does not accurately return status of all clients in cell - shows OK even if some are down
- deadlock occurring in `rpc__cn_call_start()`
- `cdsd` on the replica clearinghouse keeps core dumping
- The function '`sec_key_mgmt_manage_key()`' always fails with `passwd`
- The function '`sec_key_mgmt_change_key()`' corrupts keytab file if the registry is read-only
- Problem detecting a change in the callback address which prevents the connection from being re-established
- The command '`dcecp -c cell ping -clients`' does not accurately reflect the state of clients in a DCE 1.1 cell

Appendix A Software Changes

DEINSTALL Change

The DCES segment cannot be de-installed using the COE Segment Installer. Please read the DCES segment release notes for instructions on how to successfully de-install.

Dependency on DCE Client

The DCES segment also is no longer dependant on the DCE_client segment. The DCES now contains the DCE client software with the various servers.

Installing Patches

The DCEC segment also adds a new option on the menu bar for the Sysadmin Account Group. This new option allows the operator to apply DCE Patches from Patch segments that are installed on the system. DCE Patches require a DCE shutdown while the patch is being applied. This new option will allow a Patch Segment to be installed but the patch does not have to be applied until DCE can be shutdown without interfering with system operations

Author: "Stuart Kurkowski" <kurkowsks@ncr.disa.mil> at SMTPLink-Logicon
Date: 8/5/97 10:18 AM
Priority: Normal
Receipt Requested
TO: Terry Smith at LOGICON.LC2
CC: smith5m@ncr.disa.mil at SMTPLINK-Logicon
CC: kurkowss@ncr.disa.mil at SMTPLINK-Logicon
CC: froedea@ncr.disa.mil at SMTPLINK-Logicon
CC: dorseyr@ncr.disa.mil at SMTPLINK-Logicon
CC: cameronc@ncr.disa.mil at SMTPLINK-Logicon
CC: hartleyd@ncr.disa.mil at SMTPLINK-Logicon
CC: goddardm@ncr.disa.mil at SMTPLINK-Logicon
CC: beaudoe@ncr.disa.mil at SMTPLINK-Logicon
CC: gormana@ncr.disa.mil at SMTPLINK-Logicon
Subject: DII COE Engr Office Waivers for DCE Server Segment

----- Message Contents -----

ALCON,

The DCESsegment is for the Solaris 2.5.1 OS. The following software and documentation waivers were issued during the CDR.

1. Permission is granted for root access for the PostInstall process
2. Permission is granted for the applications to be assigned to the SysAdmin AcctGroup.
3. Pulldown menus will be provided.
4. The following DII COE documents will be delivered for the DCES segment:
Version Description Document (VDD) NOTE: The VDD in the upcoming documentation requirements is being renamed the Software Version Description (SVD). All referenced to the VDD should be replaced with the SVD nomenclature thus this item is the:
Software Version Description (SVD)
Installation Procedures (IP)
5. The following DII COE documents are waived for the DCES segment delivery:
Software Requirements Specification (SRS)
Database Design Document (DDD)
Operators Manual (OM)
Software Test Plan (STP)

Software Test Description (STD)

System Administrator's Manual (SAM), covered by commercial
documentaion

Software User's Manual (SUM), covered by commercial documentation

6. No softcopies of commercial documentation are required to be delivered.

The date and time of this e-mail should be used in the Delivery Letter and in the Software Version Description (SVD) for quoting the waivers issued by the DII COE Engineering Office.

V/r,
Capt. Stuart Kurkowski
DII COE Engineering Office